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ABSTRACT

This paper reemphasizes the purpose of teaching, which is to help students learn how to learn. Attention is focused on two areas: leadership in the classroom and appropriate use of technology. The right leadership style will motivate students to give extra effort in the course. Specific examples are provided. Building on the concept of teacher leadership style, the concept of appropriate technologies is introduced, with specific examples of how to implement these concepts. (Contains 12 references.) (Author/MES)

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# Enduring Principles of Teaching (Technical Disciplines) in the 21st Century

By: Rob Byrd

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Mid-South Instructional Technology Conference
Teaching, Learning, & Technology
The Challenge Continues
March 30-April 1, 2003

# 2003 Conference Proceedings

# Enduring Principles of Teaching [Technical Disciplines] in the 21st Century

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Track 1 - Effective Technology Based Learning Environments
Interest: General :: Lecture/Presentation :: Level: Beginner

## Abstract

Reemphasizes the purpose of teaching, which is to help students learn how to learn. Attention is focused on two areas: leadership in the classroom and appropriate use of technology. The right leadership style will motivate students to give extra effort in the course. Specific examples are provided. Building on the concept of teacher leadership style, the concept of appropriate technologies is introduced, with specific examples of how to implement these concepts.

## Proceeding

Teaching is a profession. And by definition, a profession is an "occupation requiring advanced training ... and usually involving mental rather than manual work" (Webster's, 1953). Mastering and employing techniques that result in reducing the profession of teaching to a manual skill is not only demeaning for teachers, but ineffective as well. While we generally understand that no teaching method is meant to be merely mechanically implemented, it seems appropriate in these technologically advanced times to refocus on a couple core principles of teaching. Without the expertise and wisdom of a qualified professional, a technique is no different than a checklist of how to bake brownies or assemble a bicycle.

Of course, the primary purpose of teaching is not actually teacher teaching, but

student learning. In this light, two core principles become visible which, if internalized, will hopefully increase the effectiveness of any technically oriented teaching approach. One core principle I hold to is that, as a teacher, I am a leader of students, not a manager of students or classrooms. The difference may seem insignificant now, but my intent is to demonstrate how their difference is essential in fulfilling the purpose of teaching.

And, in an attempt to be completely removed from any educational taxonomy or jargon for which we may already have a preconceived understanding, I will label the other core principle true learning. My goal in teaching is not to simply increase a student's knowledge of a subject, but to increase his/her understanding and capacity for subsequent independent learning of that subject. Without accomplishing this goal I am effectively handicapping the future graduate and not providing to society what it has already paid for, competent and self-sufficient citizens.

Paradoxically, there are techniques, or at least guidelines, for implementing these core principles of leadership and true learning. First, I will lay out the difference between leadership and management by introducing transformational/transactional leadership. I then will give some quick examples of what leadership may look like in the classroom. Next, I will attempt to convey how learning can take place *in spite of* technology by asking some probing questions and providing an illustration of how I have tried to create true learning in a laboratory situation. This approach may at first seem to some readers negative or even antagonistic, but is intended only to make all of us think about how we practice our profession of teaching and to consider ways of making our mission more successful.

**Leadership, not just Management**

Managing is about efficiency, resources, and organization. In a classroom all of these are necessary. Any unorganized teacher who has to track grades for 150 students per semester will not last. Leadership, on the other hand, is about people and inspiring them to do more than they would have done otherwise—more than they thought they *could* do. The concept of transformational/transactional leadership probably (Bass, 1990) evolved from the Ohio State Studies, where the leadership concepts Task Initiation and Individualized Consideration originated (Seltz & Bass, 1990). Burns (1978) also probably influenced Bass' leadership model.

While the terms and definitions vary from study to study, transformational leadership is generally considered to have four elements: Charismatic Leadership, Inspirational Leadership, Intellectual Stimulation, and Individual Consideration. Specifically, Charisma is the aspect of leadership that provides a clear vision and a sense of mission for the follower. Teachers having this

characteristic instill pride in their school and discipline and give a sense of belonging to the students. Charismatic leaders gain respect and complete trust of their followers. Inspirational Leadership communicates expectations to followers and uses symbols to focus efforts toward the mission. An inspirational leader has the ability to express important purposes in simple ways. Intellectual Stimulation promotes intelligence, independent thinking, rationality, and the development of problem solving skills.

Individualized Consideration is the personal attention given just at the right time in order to carry along the student's interest, understanding of, and commitment toward the vision or mission. Coaching, advising, and showing consideration even for personal/private concerns of the follower are part of this concept as well. Different researchers (e.g., Lowe, Kroeck, & Sivasubramaniam, 1996; Burns, 1978; Conger & Kanungo, 1987; Yukl, 1989) have given slightly different descriptions of transformational leadership than presented above, but all present it as a leadership style that encourages cultural change and the adoption of a new mindset.

Transactional leadership includes elements which could be considered as more traditional management styles, namely, Contingent Reward, Management by Exception (Active and Passive), and Laissez Faire. First, the concept of Contingent Reward suggests that contracts (written or not) are required in order to get the follower to perform some task. If the task is performed according to the predefined agreement, then the reward is given to the follower. Leaders displaying Contingent Reward will recognize accomplishments. With the second concept, Active Management by Exception, a leader watches and searches for deviations from rules or standards and attempts to take corrective action, does not allow for recognition of unexpected successes or accomplishments. Employing this characteristic, one only looks for defects and the negative side of performance. Leaders practicing Active Management by Exception will, however, try to look for deviations before they occur, or, at least as they are occurring, and attempt to minimize the cost of the poor performance or incorrect action. Passive Management by Exception is characteristic of the leader who intervenes only if standards are not met. Laissez Faire, often considered a form of non-leadership rather than an element of Transactional leadership, would describe the one who avoids making decisions altogether. This leader would likely be out of the office whenever an important decision needs to be made.

While transactional leadership, including Contingent Reward and Management by Exception (Active and Passive), may not embody all aspects of management, it could generally describe several management roles and affect the outcomes of decisions regarding efficiency, resources, and organization. Researchers have repeatedly found in studies that transformational leadership is more effective than

transactional leadership alone, calling the phenomenon the one-way augmentation effect (Bass, 1997). By leading students and not just managing classrooms, we can be effective as well as efficient. The concept of leadership presented here is not to be confused with the educational term Teacher as Leader, which generally entails taking on schoolwide responsibilities, committees, bearing some of the administration's burden, etc. All those endeavors are fine, and I'm sure, constructive, but don't directly address the present discussion of leading students.

Is it necessary or even possible to be a transformational leader in the classroom? If our primary purpose is student learning, I don't see how we have a choice. Almost by definition, we will be practicing this leadership style as we increase understanding and capacity for subsequent independent learning. This can only be realized by changing the student—or more correctly—allowing the student to change and providing support and direction for that change. Some simple examples of how to practice transformational leadership follow.

Managers-only don't see the point in learning all the student's names. Leaders learn them and use them to show consideration for the individual. This small act instills great motivation and self-esteem in the student. Managers wouldn't ask hard, provoking questions during class time. It would only result in "dead air time" and not be efficient. Leaders ask those intellectually stimulating questions and don't get nervous when no one answers until after ten or fifteen seconds of quiet. It is only then that the students really believe the teacher wants a meaningful answer rather than a rote spout. When handled properly these situations often result in complete engagement of the students. Managers prepare lessons and present them: it's called being organized. Leaders also know the material in the lesson and communicate it to the students in whatever fashion necessary, even if it means using unrehearsed analogies to provide a clearer picture of the concept.

Similarly, managers may put staying on schedule with their syllabus ahead of making sure the students understand the material. Leaders know that if today's material isn't understood, tomorrow's lesson won't mean anything anyway. Managers look at the clock to make sure they are going to finish their presentation in a timely manner. Leaders look into the eyes of the students to make sure there is still an open communication line, and adjust as necessary to keep the line open. Managers reward accomplishment with grades. Leaders additionally provide praise for effort irrespective of the accomplishment, or grade. Managers know they control the reigns because they turn in the grades. Leaders also foster a sense of community, allowing the students to take pride in knowing they had something to do with the success of the course....Well, I hope you get the idea.

There are, undoubtedly, some professors who are very skeptical about this type of charismatic, inspirational, and what they consider "wishy-washy hogwash."

I have met them. But in my experience, over the past several years, the more I try to become a transformational teacher, the more satisfying my work is, and the more effective college teacher I think I am becoming. Remember, transformational elements of leadership are to augment those of management, not replace them.

**Learning in Spite of Technology**

From the Internet to the electronic chalkboard and from ACT scores to computer lab manuals, technology is a dominant factor in every aspect of education. Is it possible to develop a computer-based computer lab with no direct "instructor" contact? Sure it is. *Simply* (ha ha) write a set of instructions in a clear enough format that all students can understand (after throwing away the concepts of learning styles and multiple intelligences), develop a software tutoring system to guide the learner through the exercise, and computerize a grading system which simultaneously evaluates the student's work and records a score in the teacher's grade book. But before fully committing to such a methodology, or mythology, we need to determine its possible consequences. It's one thing to mass produce rifles using an automated assembly line, but quite another to automate an assembly line of students using tutorials on a computer. Has education already gone too far in automating education? Employers expect their workers to think on their feet, yet teachers hand each student a calculator and implicitly say not to be bothered with quick recall or memorization. Managers want supervisors with effective verbal and written communication skills, yet teachers give multiple choice tests and students think word processing spell checkers correct homonym errors and other inappropriate word usage. And I apologize for not having time to joust every academic department, but mention these because I personally have been guilty on all charges listed above.

[Surprisingly,] I'm not blaming teachers. One cause for this behavior may be the external pressure for teachers to be more efficient, as opposed to being effective. Pressure to get students with ACT scores of 14 to learn the material just like every other student. Pressure to produce. Produce more research. Produce higher retention. Produce, produce, produce. Another source of degraded education may be the evolution of the meaning of learning. Ages ago, learning (at the university level) meant gaining understanding as well as knowledge. That was the distinction between liberal arts schools and technical schools. Now, no matter what is stated in the university's mission statement or the department's degree program, bachelor's degrees are obtained by some students with less than four years of college knowledge and almost no understanding. How do they slip through? Just maybe, technology is not the silver bullet we were looking for to increase the level of true learning on—and off—campuses today. Since most of the constraints just described are not about to go away, what is a teacher to do?

Just recognizing the ensuing technological barrage and its possible effect on true learning is a great start. Although I may have come down hard on technology, I think it is necessary to do so, given the overwhelming attention technology has recently been receiving. Every technology, whether ACT and IQ scores, pencil and paper, or a virtual university, is not either good or bad, but both. And it is impossible to determine the final outcome of a newly unleashed technology (Postman, 1992). Secondly, by continually refocusing on our core principles of leadership and true learning, we can develop strategies which incorporate technology, yet make the student aware that their true learning is what is important to us.

Here is an example from my computer science lab taught primarily to freshmen and sophomore students. One teaching method could be (and in some schools is) to write specific instructions for the student to follow, down to the specific command or keystroke. By the end of the two-hour lab he/she will have completed the assignment and "learned" the topic. The student passes with an A and thinks the material is understood. It never really was comprehended.

Another, less extreme, method would be to explain in great detail the primary operations and algorithmic processes which must be properly coded to complete the assignment in the most efficient manner, even though a class lecture has already been presented on the topic. This may work in some cases, but prevents the student from thinking for him/herself and usually doesn't prepare the student for harder problems unless given the proper algorithm the next time as well.

A third method could be to only define the problem to be solved and give total freedom to develop any operations and processes which may (or may not) solve the problem. The roles of the teacher in the most recently described method would be to empower students to be creative, vigilantly watch as frustration levels get high enough to produce true learning, and to intervene before frustration is high enough to break the student's spirit. When students accomplish something that seems difficult to them there is enormous intrinsic reward, increased motivation, and a craving to be challenged even greater the next time. Students want to be challenged. They also want to be recognized by a real person, not a computerized "+Super job! Bob+."

Furthermore, they want to know that we, the teachers, are in the trenches with them. Sounds kinda like leadership, doesn't it?

A lab assistant in the computer lab is good, but not the same as a caring professor in the computer lab who will immediately recognize when the student's program works. I don't mean to patronize at all, but they want to be able to say, "Look Dad, I did it"—it's human nature. What's really pathetic, I feel like a proud father and all I really did was encourage them when they didn't think they could do it. Sure, this method takes more energy out of a teacher. But the reward is well worth it. It's a phenomenon that technology can't reproduce for the student or for the teacher. And by being in the lab with

the students doesn't mean I am hand-holding and making it easy for them—ask any of my students.

I have applied this nontechnical, empowering approach to the other areas originally mentioned (math, multiple choice tests, and writing challenges) with similar success. When we understand that technology is not the cure-all, but a set of tools at *our* disposal to produce true student learning, our teaching will be effective and we will find or create appropriate teaching methods.

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(For a complete bibliography on transformational leadership email rob.byrd@wku.edu)

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